

FIG. 1 A

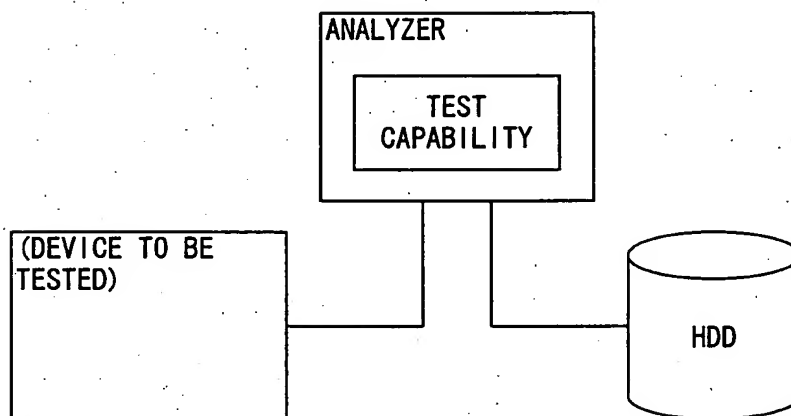


FIG. 1 B

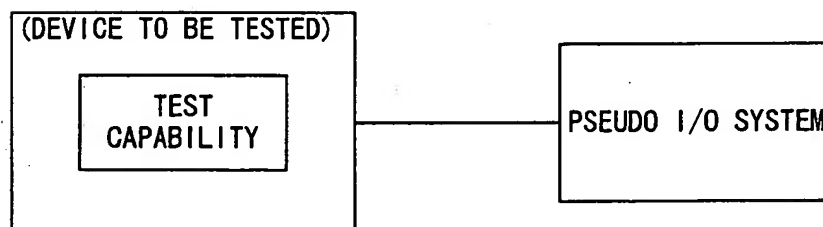
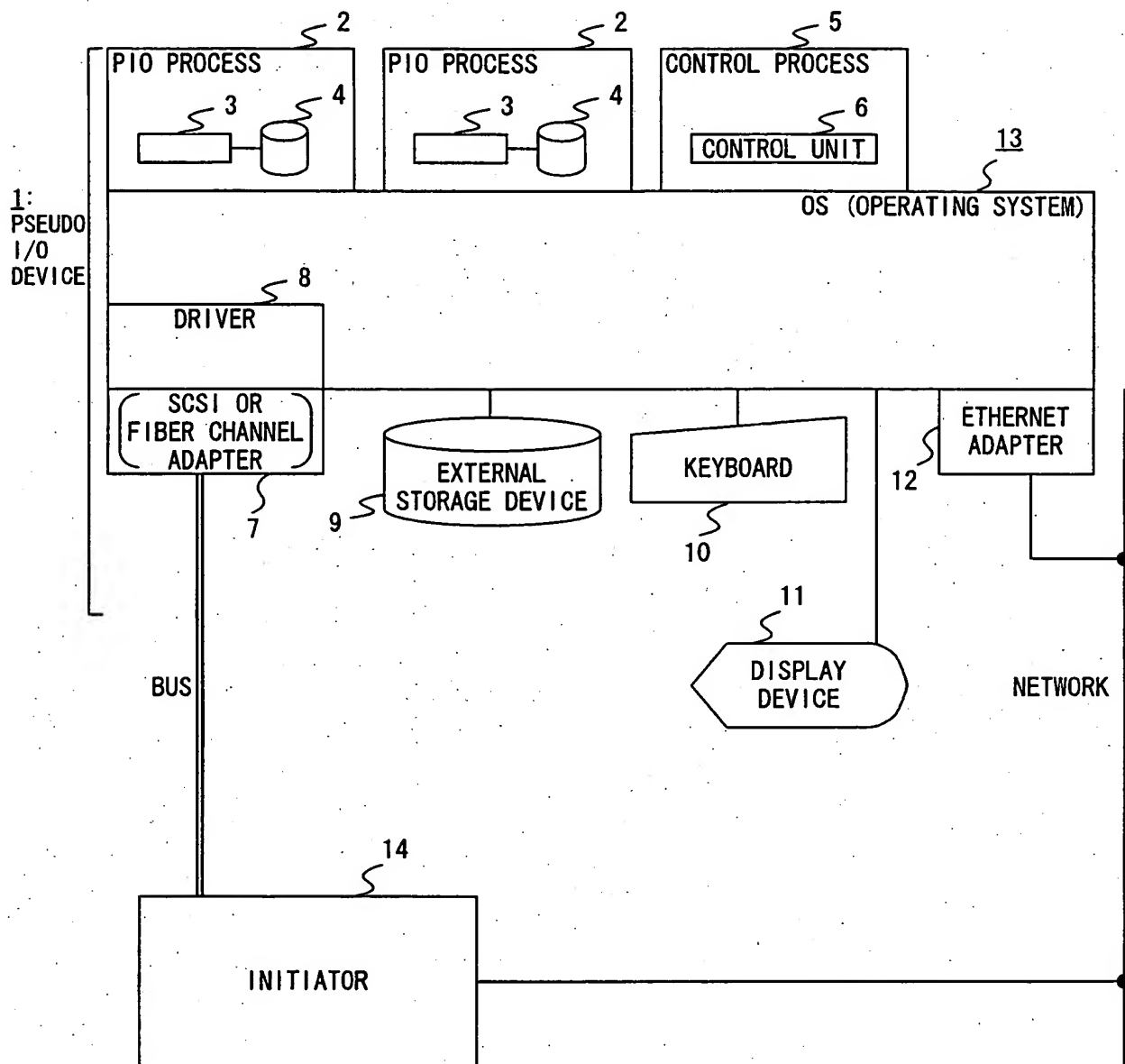


FIG. 1 C

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10028279-102801



3: PSEUDO I/O UNIT
4: SETTING FILE

FIG. 2

The diagram illustrates the architecture of the PIO PROCESS, which is divided into two main sections: a top section for data and settings, and a bottom section for processing and communication.

Top Section (Data and Settings):

- 21 INITIAL SETTING FILE**: A file for initial settings.
- 22 FREE DATA AREA**: A designated area for free data.
- 23 CONFIGURATION INFORMATION SETTING FILE**: A file for configuration information settings.
- 24 TRACE FILE**: A file for trace data.
- 25 I/O DATA AREA**: A designated area for I/O data.
- 26 LINK ERROR SETTING FILE**: A file for link error settings.
- 27 REPLY DATA AREA**: A designated area for reply data.
- 28 ERROR SETTING FILE**: A file for error settings.
- 29 PROCESS SETTING FILE**: A file for process settings.
- 30 ERROR SCHEDULE FILE**: A file for error scheduling.

Bottom Section (Processing and Communication):

- 31 PROTOCOL PROCESSING UNIT**: The central unit for processing protocols.
- 32 SIGNAL HANDLER**: A unit that handles signals, connected to the DRIVER and the PROTOCOL PROCESSING UNIT.
- 33 INTER-PROCESS COMMUNICATING UNIT**: A unit for communication between processes, connected to the PROTOCOL PROCESSING UNIT and the OS.
- DRIVER**: A component that interfaces with the ADAPTER and the SIGNAL HANDLER.
- OS (OPERATING SYSTEM)**: The operating system that manages the process and communicates with the INTER-PROCESS COMMUNICATING UNIT.
- ADAPTER**: A component that interfaces with the DRIVER and the OS.
- ANOTHER PROCESS**: An external process that communicates with the INTER-PROCESS COMMUNICATING UNIT.

Connections and Flow:

- The **ADAPTER** (labeled **8**) is connected to the **DRIVER** via a bidirectional arrow.
- The **DRIVER** is connected to the **SIGNAL HANDLER** (labeled **32**) via a bidirectional arrow.
- The **SIGNAL HANDLER** is connected to the **PROTOCOL PROCESSING UNIT** (labeled **31**) via a bidirectional arrow.
- The **PROTOCOL PROCESSING UNIT** is connected to the **INTER-PROCESS COMMUNICATING UNIT** (labeled **33**) via a bidirectional arrow.
- The **INTER-PROCESS COMMUNICATING UNIT** is connected to the **OS (OPERATING SYSTEM)** (labeled **1**) via a bidirectional arrow.
- The **OS (OPERATING SYSTEM)** is connected to **ANOTHER PROCESS** via a bidirectional arrow.

FIG. 3

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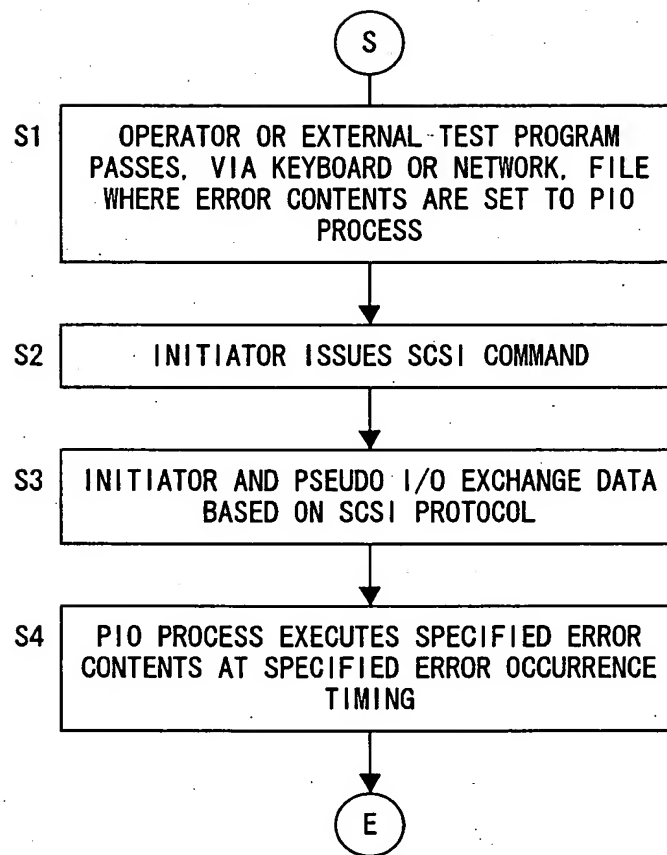


FIG. 4

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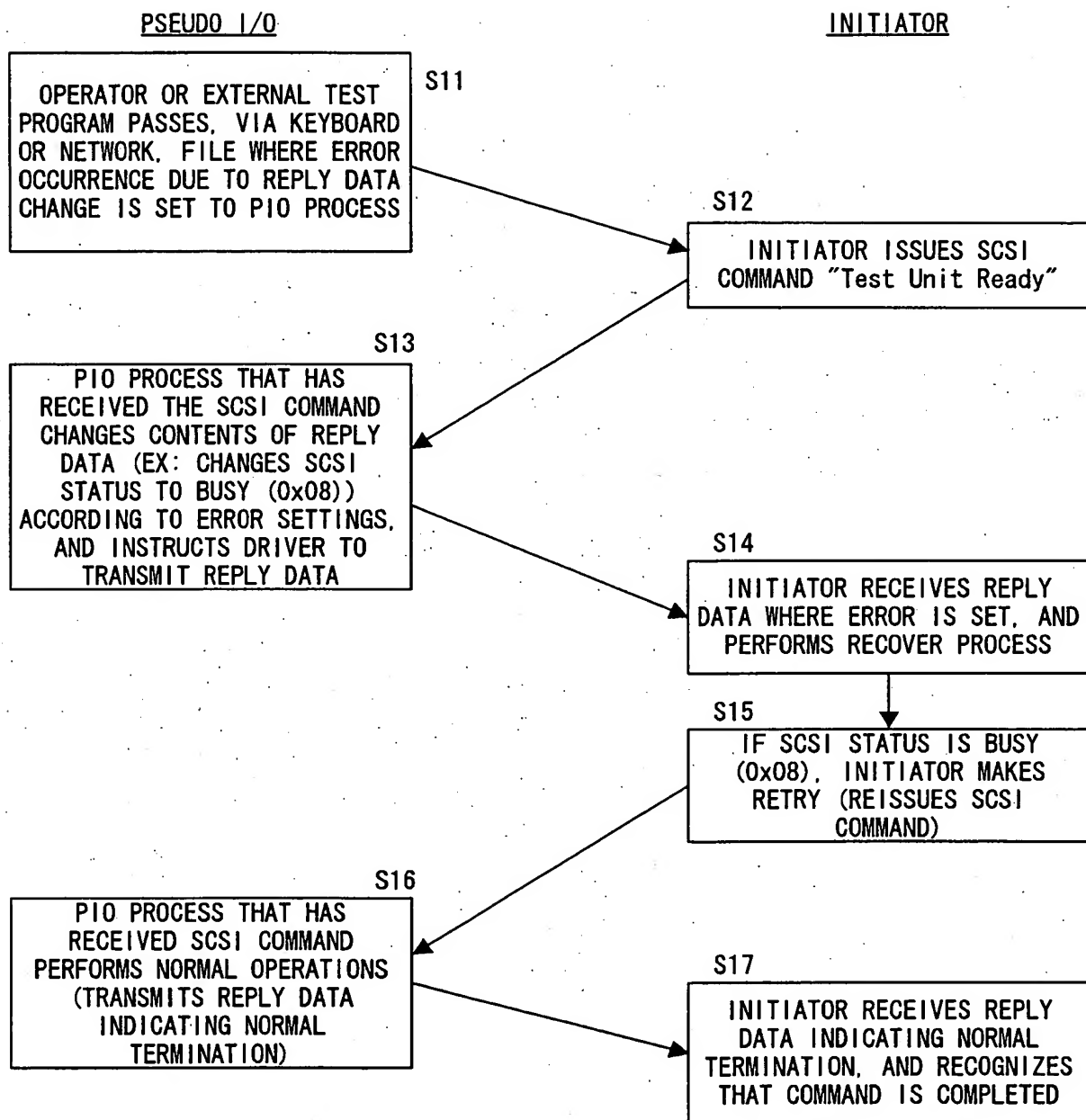


FIG. 5

1002279-12204
"0322T" 622200T

FIG. 6A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
TEST UNIT READY	VALID	Control SYSTEM	error_file1

FIG. 6B

28

ERROR FILE (error_file1)	
TIMING	ERROR CONTENTS
WHEN REPLY DATA IS RETURNED	CHANGES REPLY DATA (EX: GOOD (0x00) → BUSY (0x08))

FIG. 6C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
TEST UNIT READY	00 00 00 00 00 00

FIG. 6D

STATUS	
STATUS	VALUE
GOOD	0
BUSY	8

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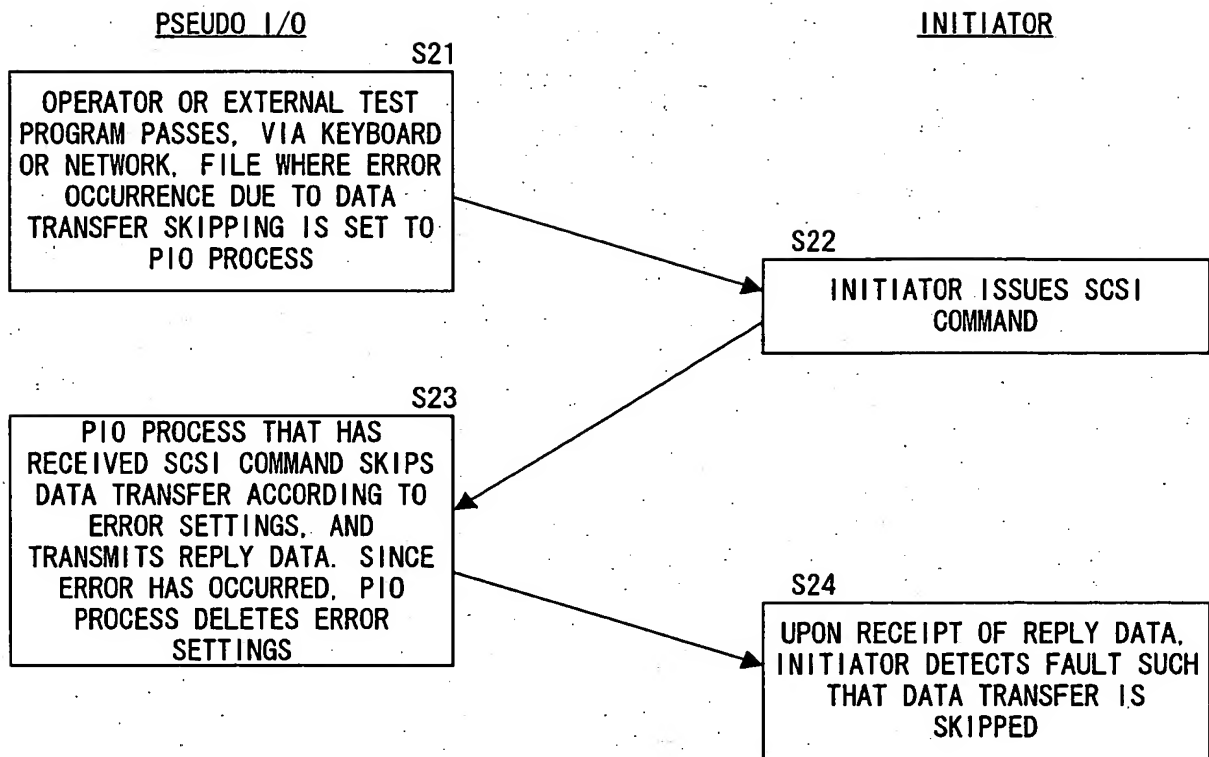


FIG. 7

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FIG. 8A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
READ	VALID	Read SYSTEM	error_file2

FIG. 8B

28

ERROR FILE (error_file2)	
TIMING	ERROR CONTENTS
WHEN REPLY DATA IS RETURNED	DOES NOT MAKE DATA TRANSFER

FIG. 8C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 01 23 45 67 00 00 01 00

FIG. 8D

STATUS	
STATUS	VALUE
GOOD	0

10028279-1228001

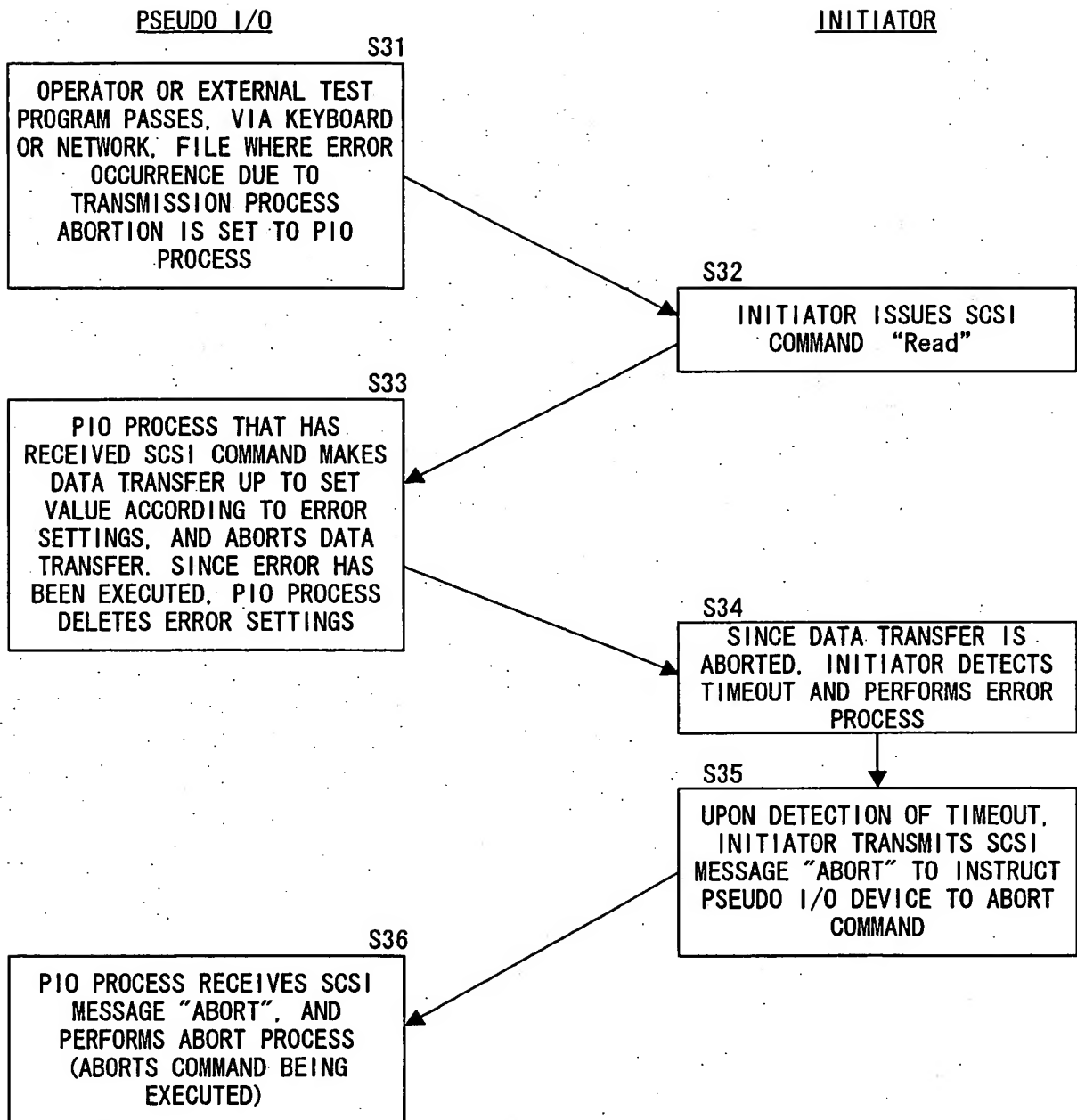


FIG. 9

FIG. 10A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
READ	VALID	Read SYSTEM	error_file3

FIG. 10B

28

ERROR FILE (error_file3)	
TIMING	ERROR CONTENTS
WHEN DATA TRANSFER IS MADE	ABORTS DATA TRANSFER AFTER MAKING DATA TRANSFER UP TO 0x200 BYTES

FIG. 10C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 01 23 45 67 00 00 02 00

FIG. 10D

INITIATOR SCSI COMMAND	
MESSAGE	VALUE
ABORT	06

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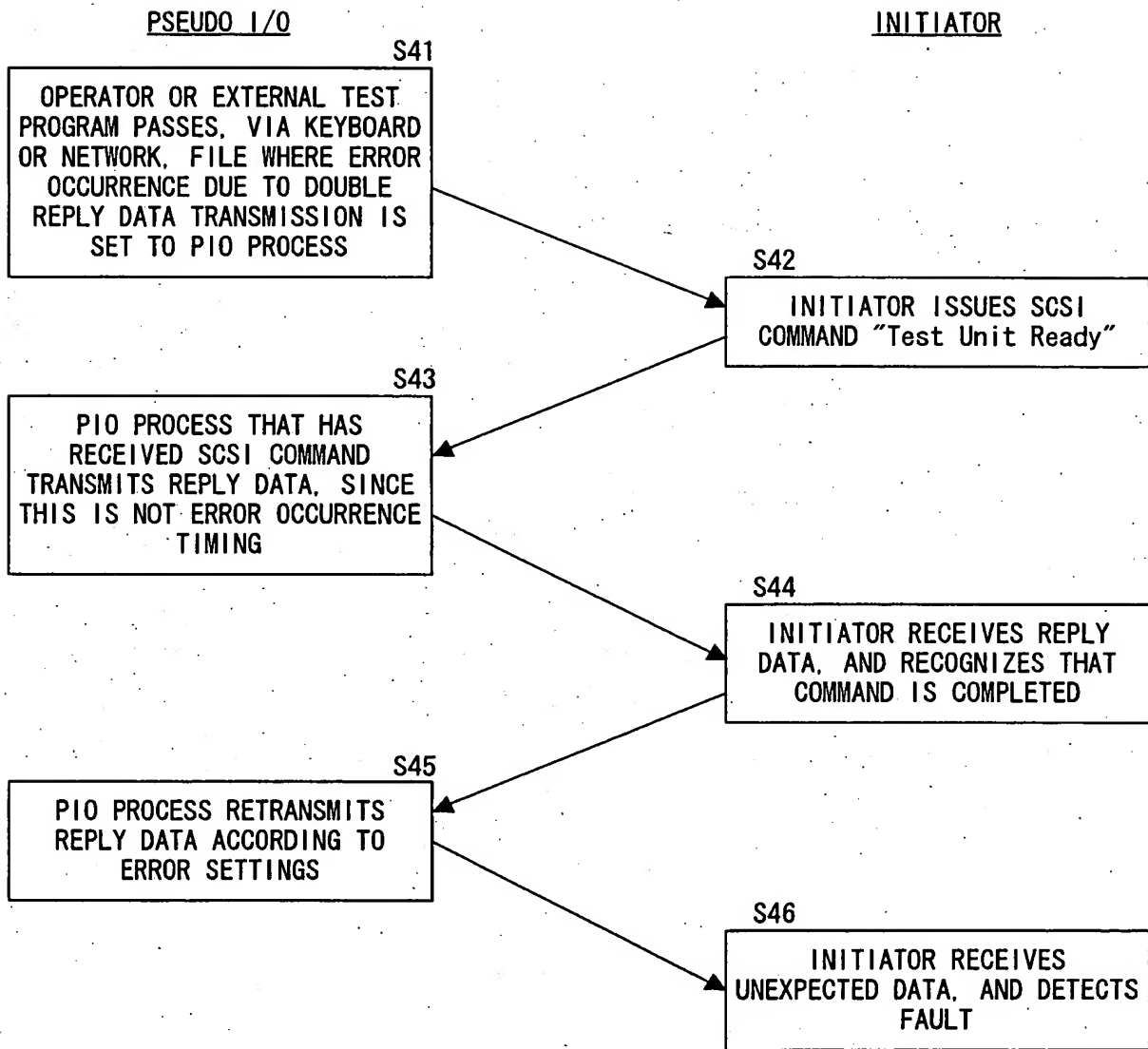


FIG. 11

FIG. 12A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
TEST UNIT READY	VALID	Control SYSTEM	error_file4

FIG. 12B

28

ERROR FILE (error_file4)	
TIMING	ERROR CONTENTS
WHEN REPLY DATA IS TRANSMITTED	RETRANSMITS REPLY DATA

FIG. 12C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
TEST UNIT READY	00 00 00 00 00 00

FIG. 12D

STATUS	
STATUS	VALUE
GOOD	0

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"08221" 6282001

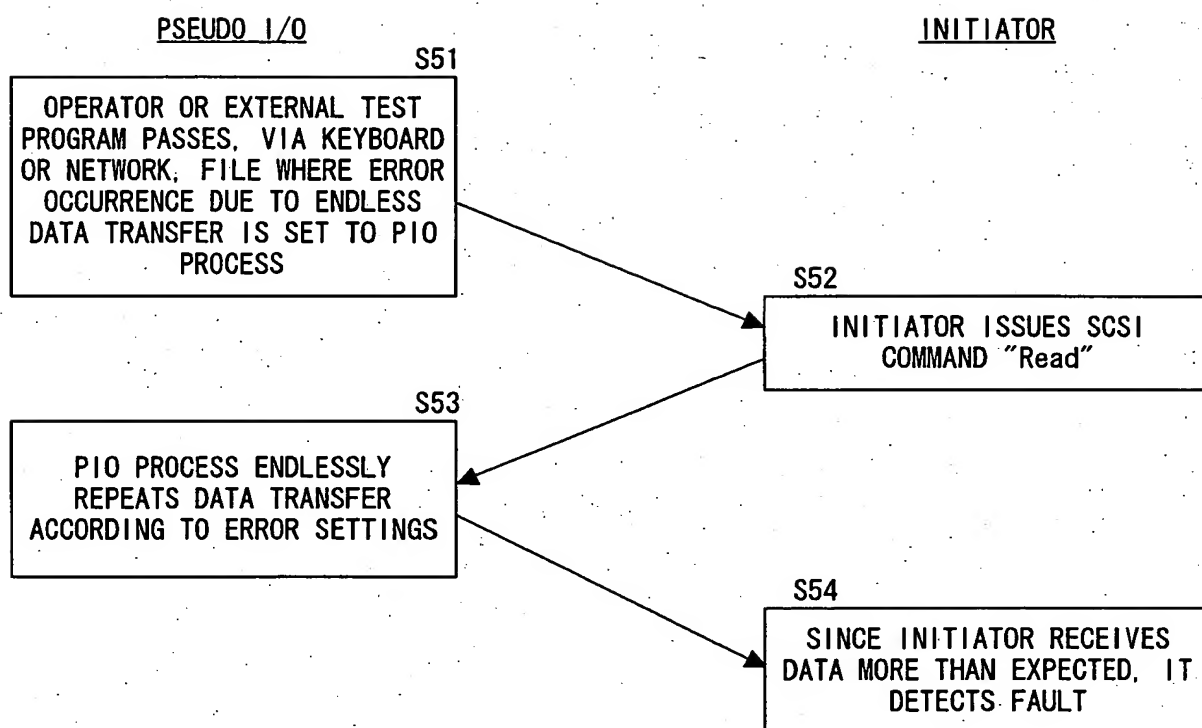


FIG. 13

FIG. 14A

29

CDB SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
READ	VALID	Read SYSTEM	error_file5

FIG. 14B

28

CDB ERROR FILE (error_file5)	
TIMING	ERROR CONTENTS
WHEN DATA IS TRANSMITTED	ENDLESSLY MAKES DATA TRANSFER

FIG. 14C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 01 23 45 67 00 00 02 00

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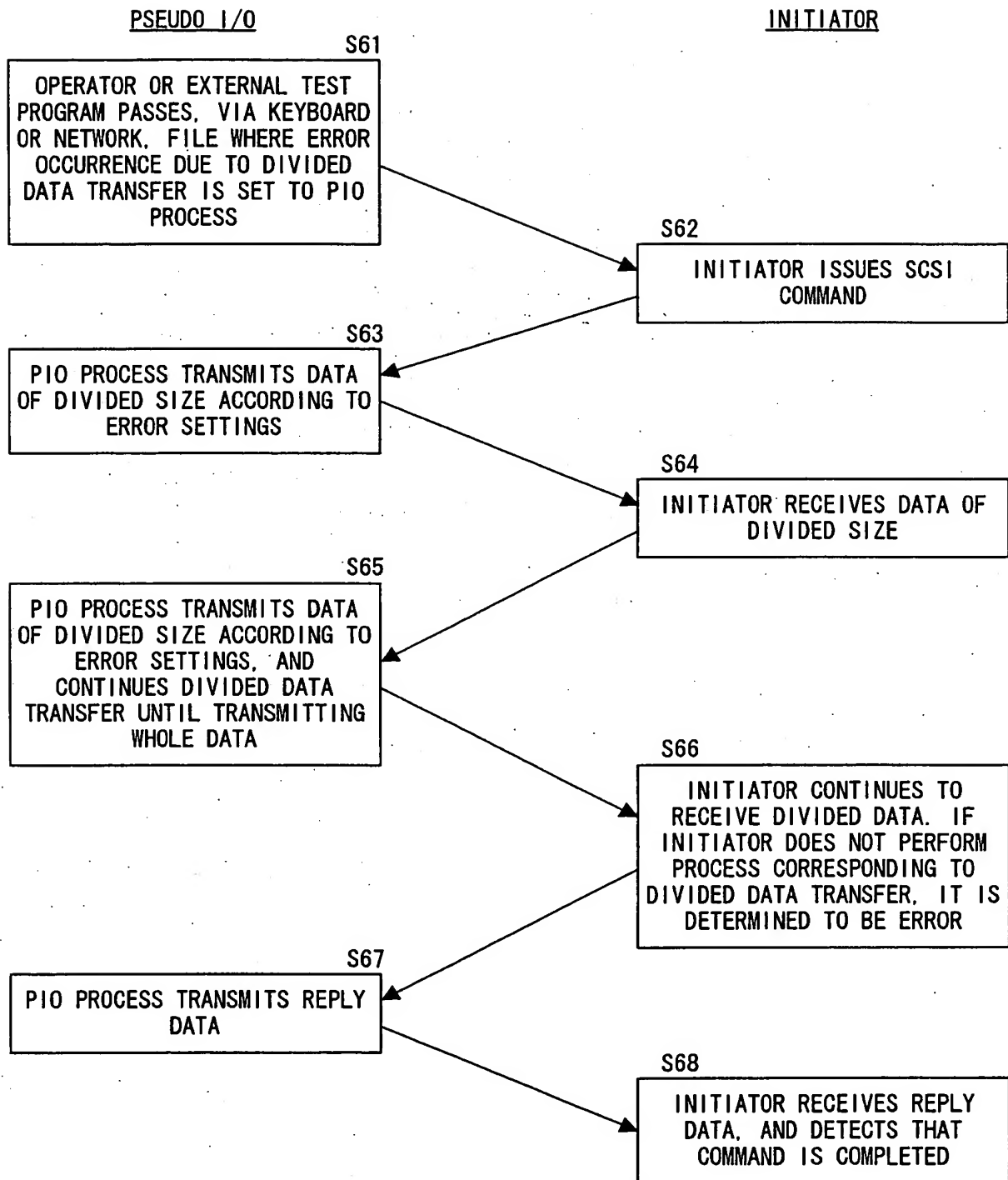


FIG. 15

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FIG. 16A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
READ	VALID	Read SYSTEM	error_file6

FIG. 16B

28

ERROR FILE (error_file6)	
TIMING	ERROR CONTENTS
WHEN DATA TRANSFER IS MADE	TRANSMITS DIVIDED DATA IN UNITS OF 0x200 BYTES

FIG. 16C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 01 23 45 67 00 00 0a 00

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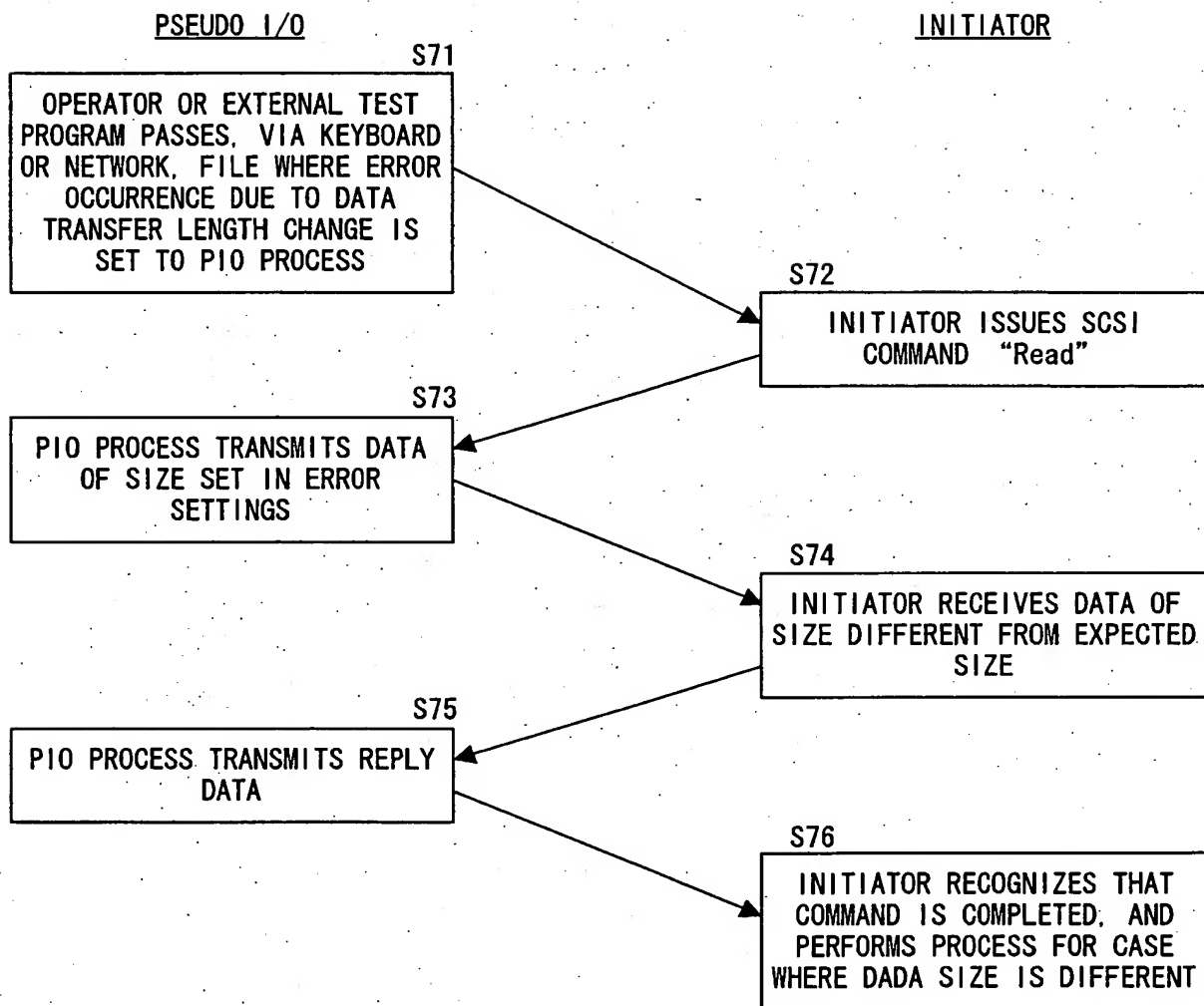


FIG. 17

FIG. 18A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
READ	VALID	Read SYSTEM	error_file7

FIG. 18B

28

ERROR FILE (error_file7)	
TIMING	ERROR CONTENTS
WHEN DATA TRANSFER IS MADE	CHANGES DATA TRANSFER SIZE TO 0x200 BYTES

FIG. 18C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 01 23 45 67 00 00 0a 00

FIG. 18D

STATUS	
STATUS	VALUE
GOOD	0

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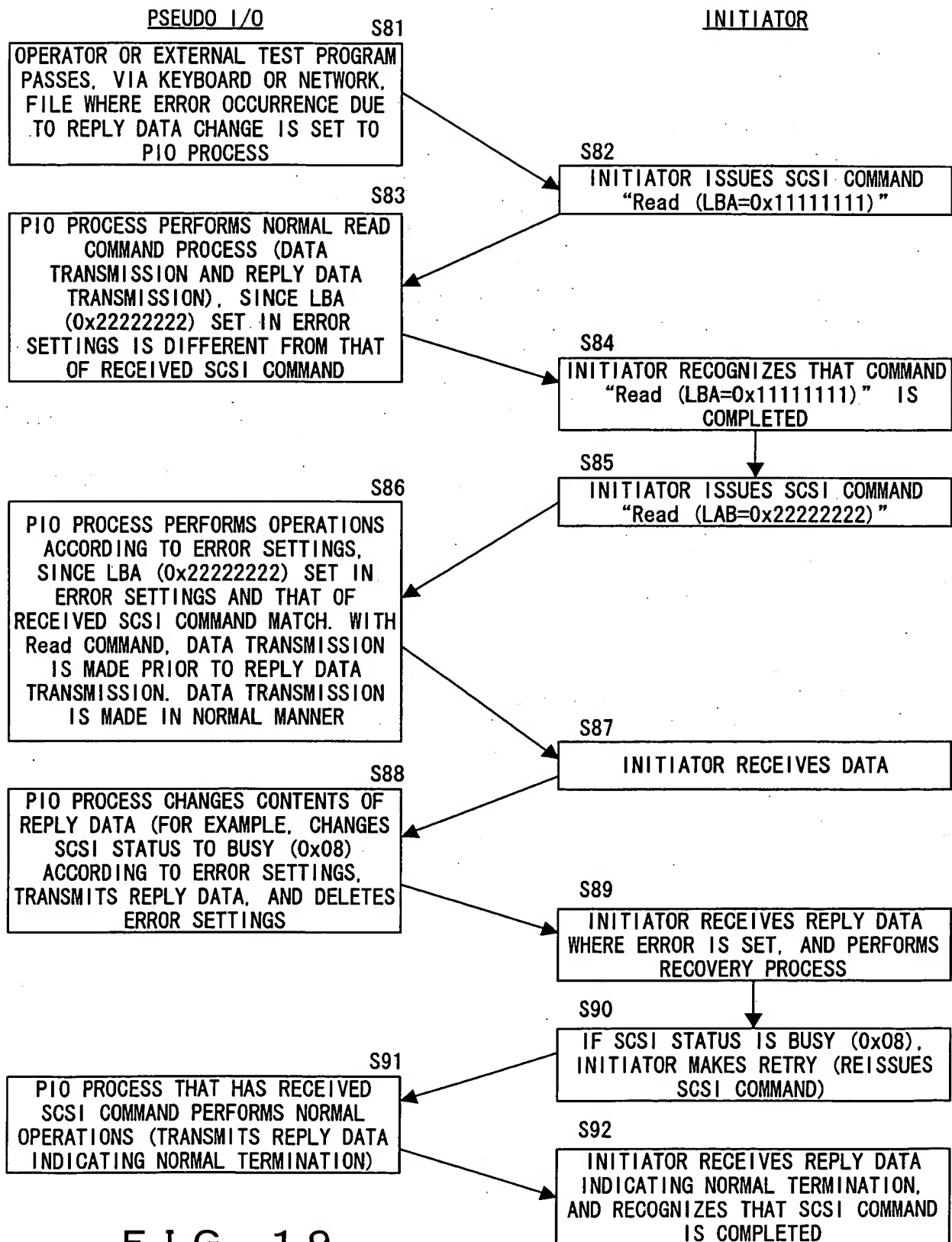


FIG. 19

FIG. 20A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
READ	VALID	Read SYSTEM	error_file8 IF LBA=0x22222222

FIG. 20B

28

ERROR FILE (error_file8)	
TIMING	ERROR CONTENTS
WHEN REPLY DATA IS RETURNED	CHANGES REPLY DATA (EX: GOOD (0x00) → BUSY (0x08))

FIG. 20C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 11 11 11 11 00 00 0a 00
READ	28 00 22 22 22 22 00 00 0a 00

FIG. 20D

STATUS	
STATUS	VALUE
GOOD	0
BUSY	8

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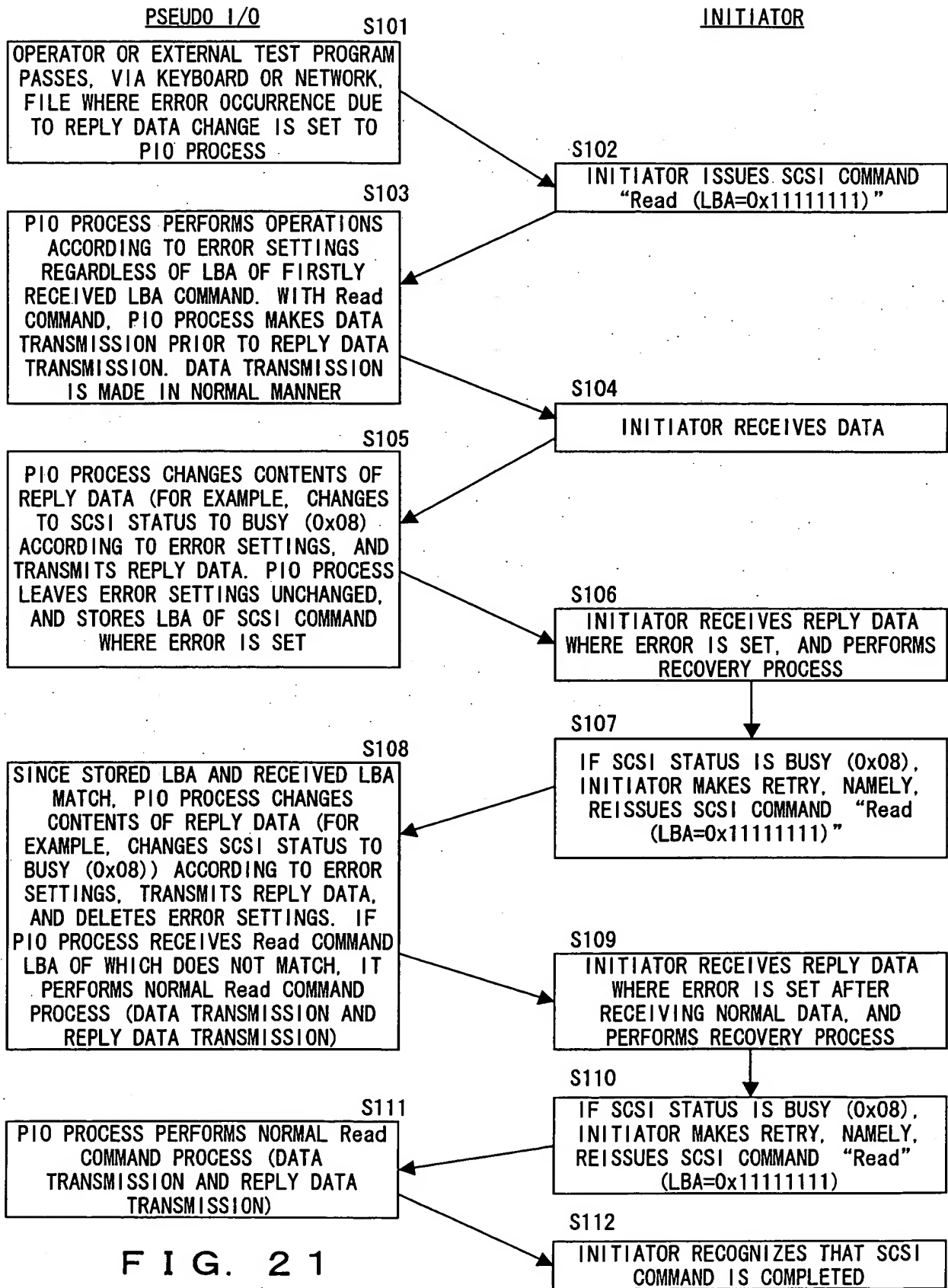


FIG. 22A

29

SETTING FILE			
COMMAND	VALID/INVALID	RETRY ERROR	ERROR FILE
READ	VALID	EXISTS	error_file9 IF LBA=0x22222222

FIG. 22B

28

ERROR FILE (error_file9)	
TIMING	ERROR CONTENTS
WHEN REPLY DATA IS RETURNED	CHANGES REPLY DATA (EX: GOOD (0x00) → BUSY (0x08))

FIG. 22C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
READ	28 00 11 11 11 11 00 00 0a 00

FIG. 22D

STATUS	
STATUS	VALUE
GOOD	0
BUSY	8

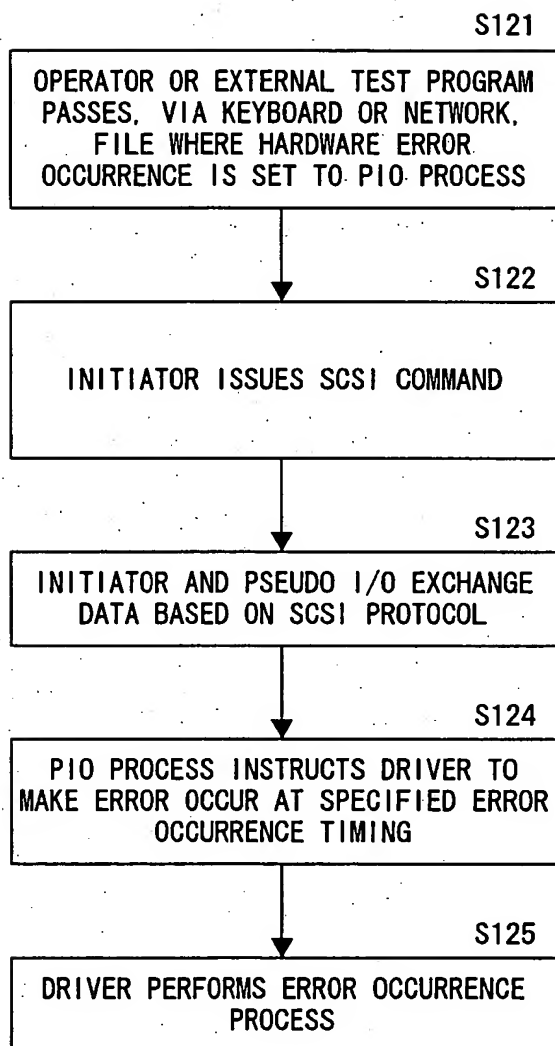


FIG. 23A

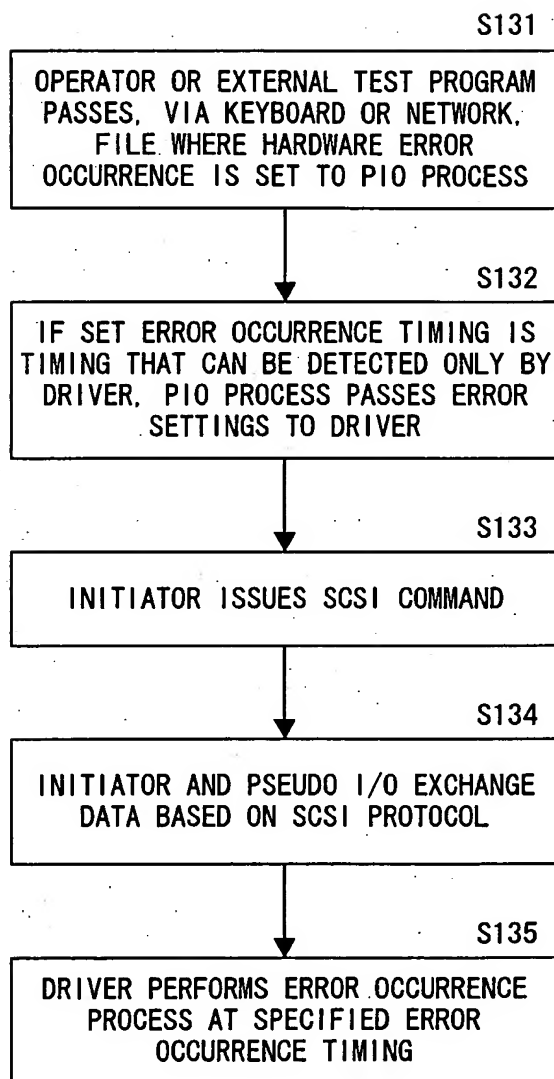


FIG. 23B

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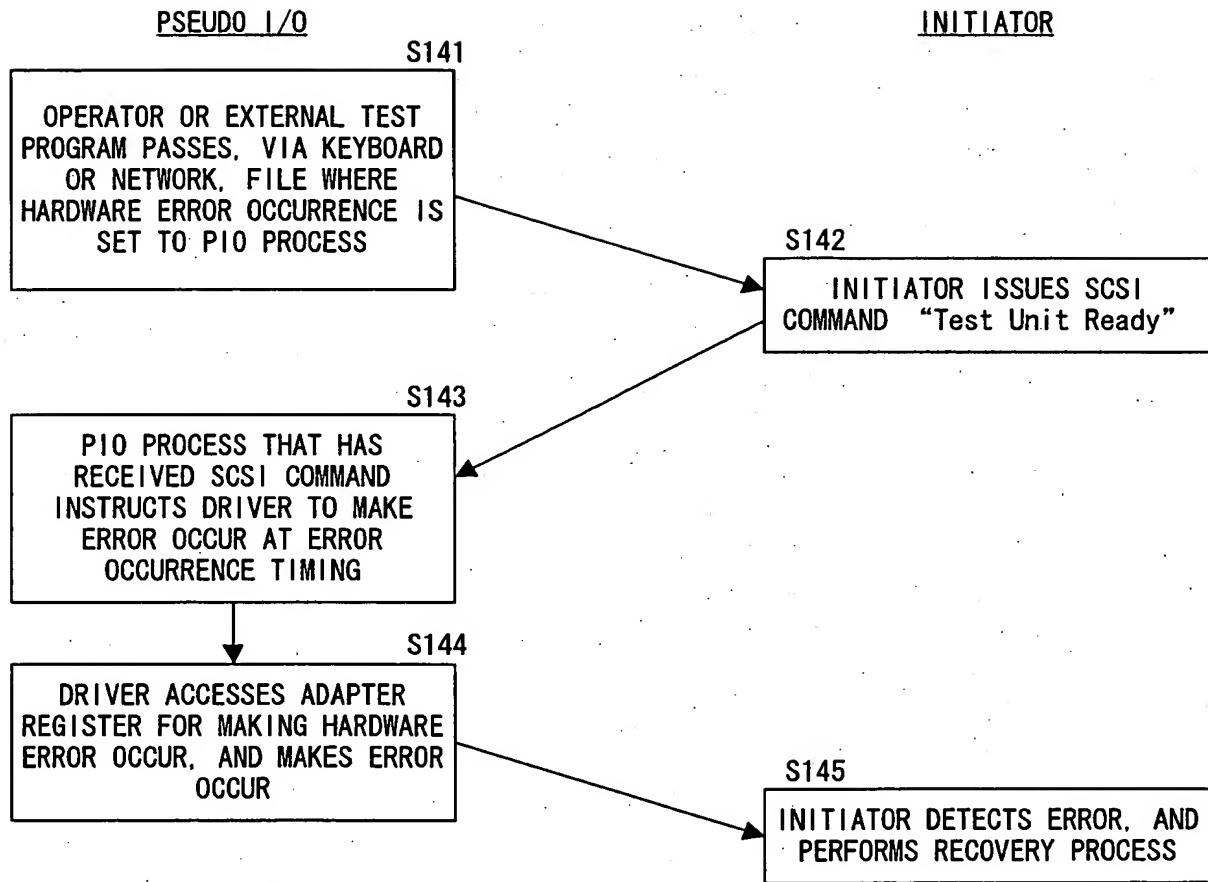


FIG. 24

FIG. 25A

29

SETTING FILE			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
TEST UNIT READY	VALID	Control SYSTEM	error_file10

FIG. 25B

28

ERROR FILE (error_file10)	
TIMING	ERROR CONTENTS
WHEN REPLY DATA IS RETURNED	MAKES FAULT IN SIGNAL TRANSMITTED OVER CABLE (EX: MAKES Link Failure OCCUR)

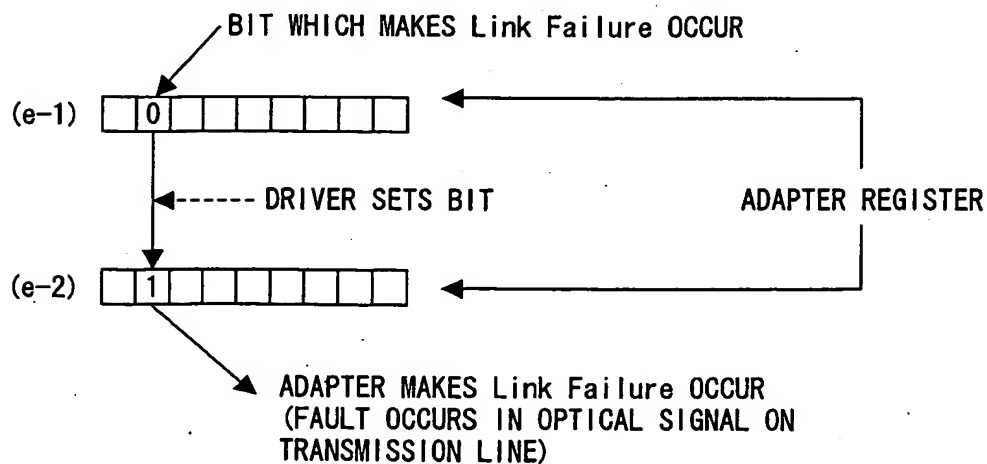
FIG. 25C

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
TEST UNIT READY	00 00 00 00 00 00

FIG. 25D

STATUS	
STATUS	VALUE
GOOD	0
BUSY	8

FIG. 25E



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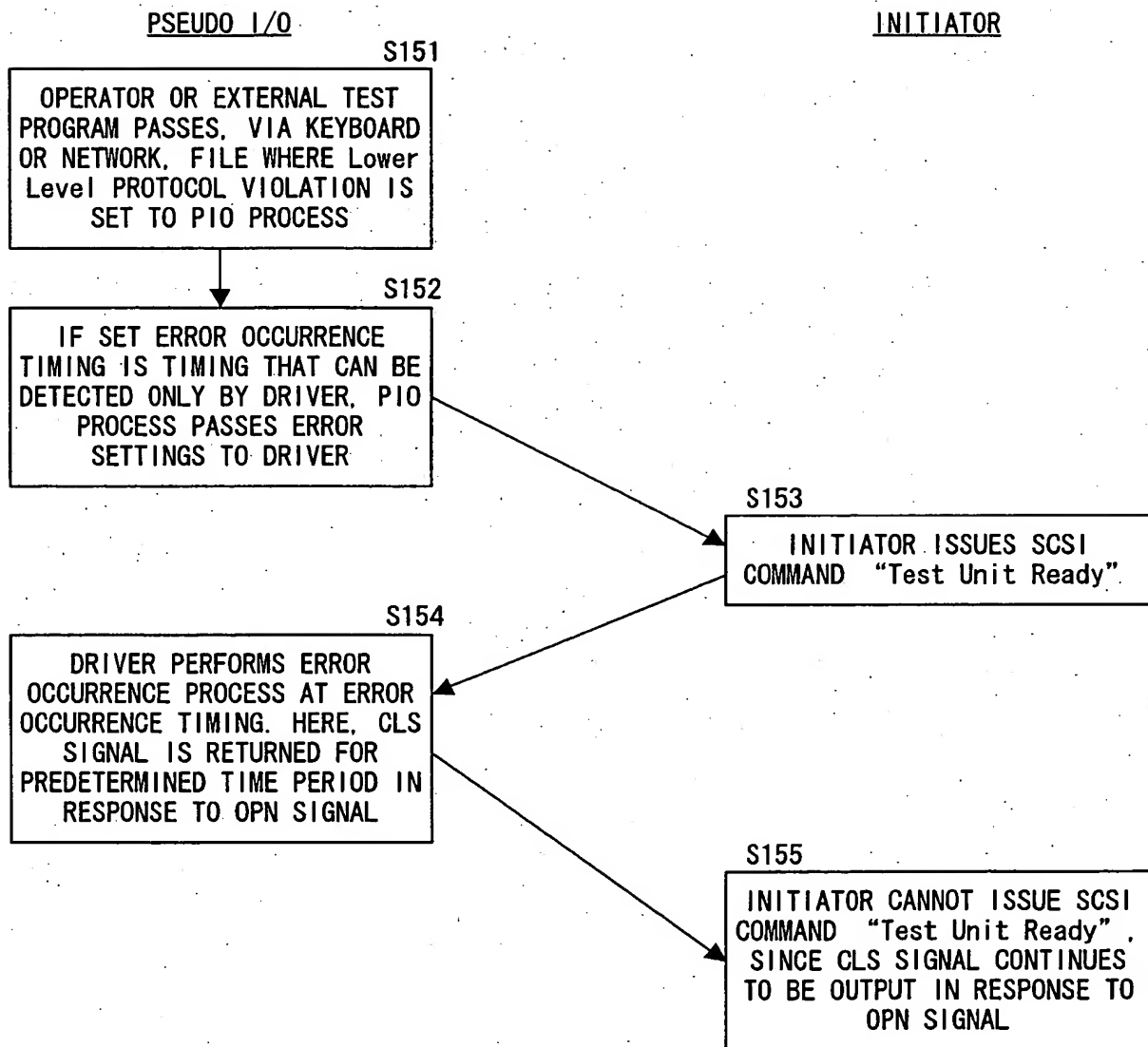


FIG. 26

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FIG. 27A

26

LINK ERROR SETTING FILE (error_file11)	
TIMING	ERROR CONTENTS
WHEN OPN SIGNAL IS RECEIVED	CONTINUES TO TRANSMIT CLS SIGNAL FOR ONE MINUTE

FIG. 27B

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
TEST UNIT READY	00 00 00 00 00 00

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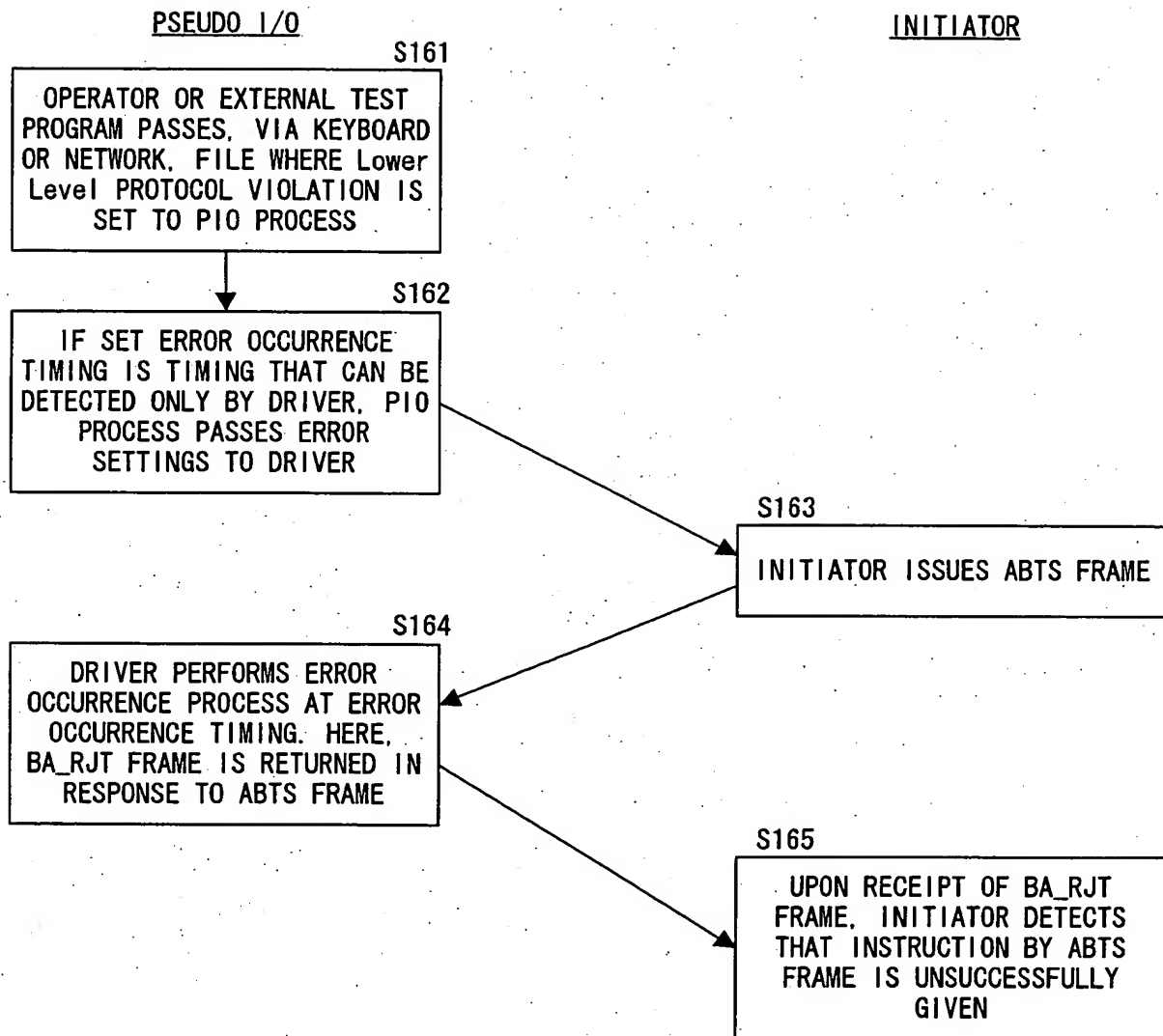


FIG. 28

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FIG. 29A

26

LINK ERROR SETTING FILE (error_file12)	
TIMING	ERROR CONTENTS
WHEN ABTS FRAME IS RECEIVED	TRANSMITS BA_RJT FRAME

FIG. 29B

INITIATOR SCSI COMMAND	
COMMAND	CONTENTS
TEST UNIT READY	00 00 00 00 00 00

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T0822T 628200T

FIG. 30A

29

PROCESS SETTING FILE (FOR MAGNETIC DISK DEVICE)			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
TEST UNIT READY	VALID	Control SYSTEM	NONE
SEEK	VALID	Control SYSTEM	NONE
ERASE	INVALID	Control SYSTEM	NONE
.

COMMANDS SPECIFIC TO
DISK DEVICE

FIG. 30B

29

PROCESS SETTING FILE (FOR MAGNETIC TAPE DEVICE)			
COMMAND	VALID/INVALID	ACTION	ERROR FILE
TEST UNIT READY	VALID	Control SYSTEM	NONE
SEEK	INVALID	Control SYSTEM	NONE
ERASE	VALID	Control SYSTEM	NONE
.

COMMANDS SPECIFIC TO
TAPE DEVICE

FIG. 31A

30

ERROR SCHEDULE FILE (schedule00)			
SETTING TYPE	COMMAND	LUN	SETTING CONTENTS
CDB PROCESS SETTING FILE	NONE	0	cdb_file0
CDB ERROR SETTING FILE	TEST UNIT READY	0	error_file01, error_file02
CDB ERROR SETTING FILE	READ	0	error_file11
CDB PROCESS SETTING FILE	NONE	1	cdb_file1
CDB ERROR SETTING FILE	WRITE	1	error_file21, error_file22, error_file23
SETTING COMPLETION	NONE	NONE	NONE
CDB PROCESS SETTING FILE	NONE	0	cdb_file2
CDB ERROR SETTING FILE	TEST UNIT READY	0	error_file31
SETTING COMPLETION	NONE	NONE	NONE
...
NEXT CDB ERROR SCHEDULE FILE	NONE	NONE	schedule01

PIO PROCESS READ SETTINGS UP TO SETTING COMPLETION. UPON COMPLETION OF EXECUTION OF ALL OF READ ERRORS, PIO PROCESS FURTHER READS SETTINGS UP TO NEXT SETTING COMPLETION

FIG. 31B

30

ERROR SCHEDULE FILE (schedule01)			
SETTING TYPE	COMMAND	LUN	SETTING CONTENTS
CDB PROCESS SETTING FILE	NONE	0	cdb_file0
CDB ERROR SETTING FILE	TEST UNIT READY	0	error_file01, error_file02
CDB ERROR SETTING FILE	READ	0	error_file11
SETTING COMPLETION	NONE	NONE	NONE
...
NEXT CDB ERROR SCHEDULE FILE	NONE	NONE	NONE